Contradiction Elimination

Darrell Mann: Hands-On Systematic Innovation for Business and Management

Immanuel von Detten

June 14, 2022

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Context

- Problem solving
- Solve a previously defined problem with a systematic approach
- Contradictions in contrast to conflicts where a situation can be solved by a compromise ("trade-off situation")
- What type of conflict is it? "It depends"

Contradictions

- "single parameter with different, contradictory requirements"
- Can happen often in business context
- Requirements from different departments, business needs, customer needs etc.
- Example: personalization on a platform - we want to have it for maximal richness, and we don't want to have it for maximal reach

Conflicts

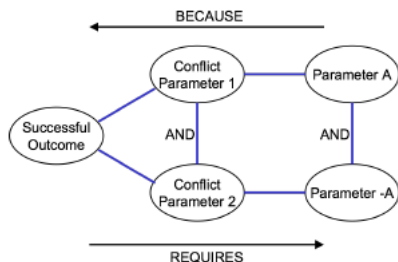- Two parameters which are in conflict with each other
- Example: cost-versus-quality

Figure 12.1: Method For Converting Conflicts To Contradictions (and vice versa)   [1]
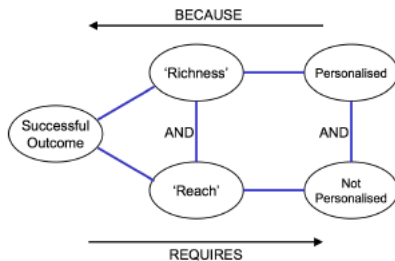
Figure 12.2: Conflict/Contradiction Conversion Framework For Richness versus Reach Problem [1]

Strategies

Separation strategies

1. Separation In Space
2. Separation In Time
3. Separation On Condition
4. Separation By Transition To An Alternative System

- Reduction of the problem
- Hierarchical list
- Based on best practices and business cases

Applying Contradiction Elimination

Separation strategies

1. Separation In Space - *Where?*
2. Separation In Time - *When?*
3. Separation On Condition - *If?*
4. Separation By transition to an Alternative System

- Asking questions about the problem
- If there is a difference in an answer: Find a solution in this dimension
- List of "Inventive Principles" as applicable strategies

Framework

- Table with combination of separation strategy and corresponding "Inventive Principles"
- Applicable top-to-bottom
- Based on "frequency of use by other problem solvers"
- Combination of separation strategies possible

Example

Personalisation

1. Where do I want personalisation? *Customer base.*
   Where do I want no personalisation? *Customer base.*
2. When do I want personalisation? *When contacting customers.*
   Where do I want no personalisation? *When contacting customers.*
3. I want personalisation if...? *...it is important to potential customers.*
   I want no personalisation if...? *...it is **not** important to potential customers.*

- Focus on separation on condition

Example

- Next, we look up which Inventive Principles can be applied

Personalisation

1. Principle 35: Parameter Changes
2. Principle 26: Copying
3. Principle 1: Segmentation
4. Principle 32: Colour Changes
5. Principle 36: Paradigm Shift
6. Principle 2: Taking Out
7. Principle 31: Holes
8. Principle 38: Enriched Atmosphere
9. Principle 39: Inert Atmosphere
10. Principle 28: Another Sense
11. Principle 29: Fluid

Example

- Look at detailed description of Inventive Principle

Personalisation

1. Principle 35: Parameter Changes
    1. Change an object's physical state
    2. Change the concentration or consistency
    3. Change the degree of flexibility
    4. Change emotional and other parameters
2. Principle 1: Segmentation
    1. Divide a system or object into independent parts
    2. Make a system or object easy to disassemble
    3. Increase the degree of fragmentation or segmentation
3. Principle 32: Colour Changes
    1. Change the color of an object or its external environment
    2. Change the transparency of a system, object or an external environment

Benefits?

- Systematic process to find innovative solutions
- Questions as useful guidelines, easy to communicate
- Rich list of "Inventive Principles" as input
- Structured process with enough flexibility to combine and adapt solution strategies
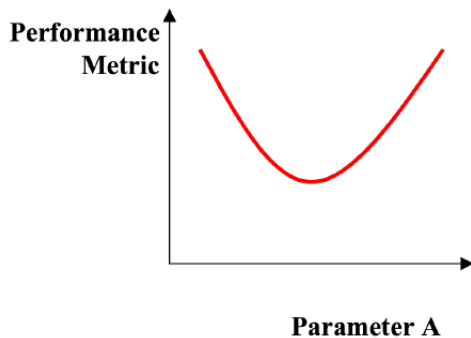
Figure 12.5: Graphical Representation Of A Contradiction.
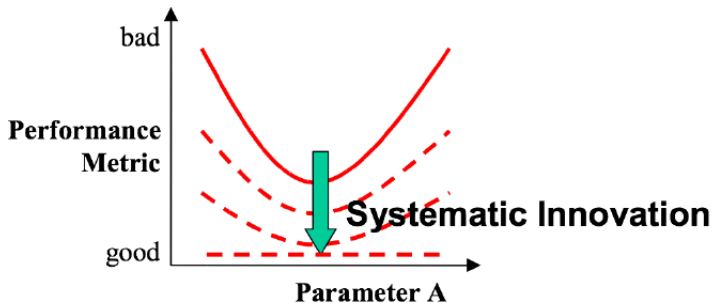
[1]

Further benefits?

Figure 12.6: Graphical Representation Of Contradiction 'Elimination' Process . [1]

- "successive challenge of the contradictions as part of a desire to achieve ideality" instead of optimisation (p. 348)

Real or fake?

- Is a contradiction real or does it only seem like there is a contradiction?
- "right-vs-right" and "right-vs-wrong"
- Important for process of contradiction elimination
- When there is no real contradiction, Systematic approach cannot be applied
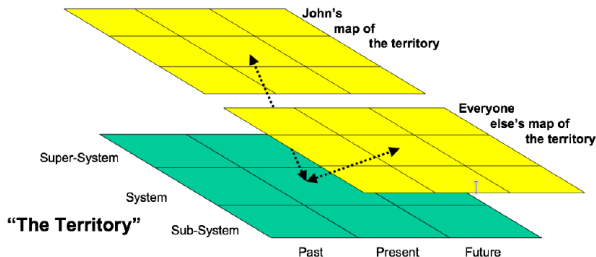
Figure 12.8: The Map Is Not The Territory.

[1]

- This model helps to find out if there is a "right-versus-wrong" situation
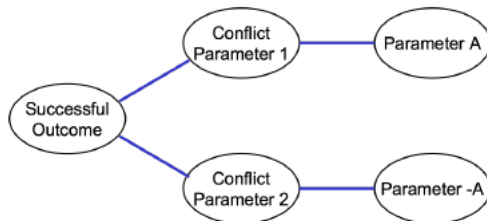
Going back...

Figure 12.9: Required Link-Breaking Focus For 'Right-Versus-Wrong' Problem Situations [1]

- Break up the "AND" link
- Those scenarios are "[...] effectively handled by examining and challenging perceptions and perceived realities" (p. 351)

Process Of Contradiction Elimination

1. Identify a contradiction
2. Work through the first three pairs of separation questions
3. If more than one separation strategy is applicable, combine Inventive Principle solutions
4. If none of the previous separation strategies are applicable, look at question four ("transition to an alternative system")
5. Use Inventive Principle suggestions as input to develop new solutions

References

[1]   Darrell L. Mann. *Hands-on systematic innovation for Business and Management*. IFR Press, 2014.